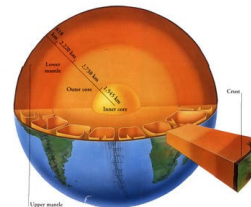
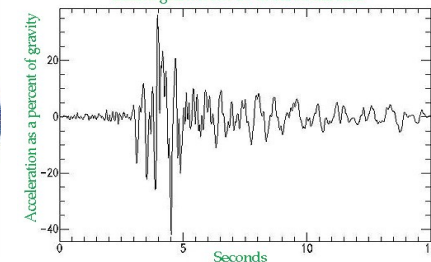
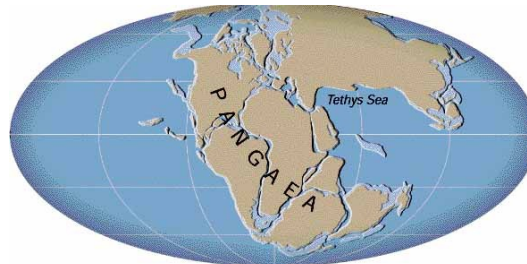


The Earth's Crust

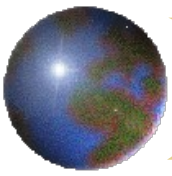
The Theory of Continental Drift



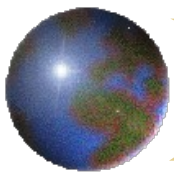
Seismogram from U. C. Santa Barbara



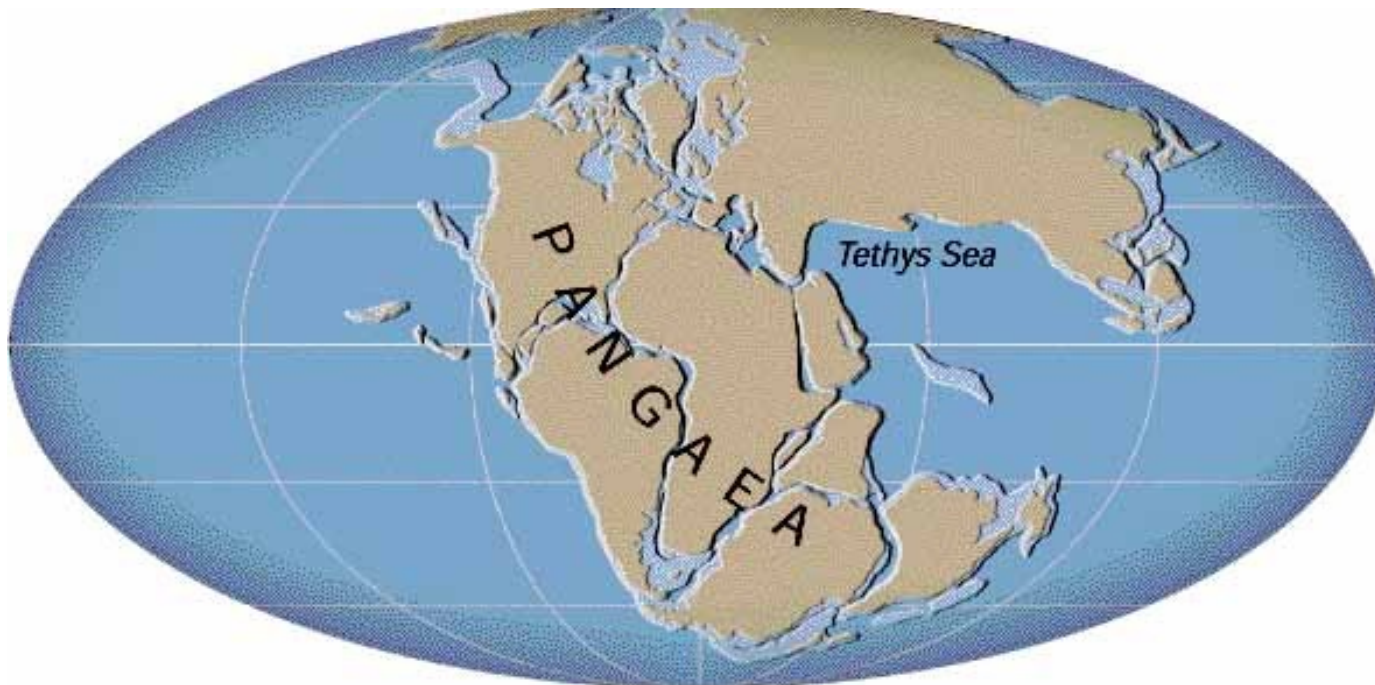
Saturday, October
7, 2023

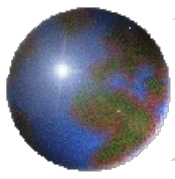


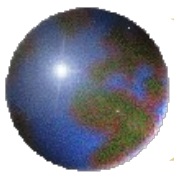
✚ Alfred Wegener – a German scientist who proposed (in 1915) that the continents were slowly drifting apart (the theory of continental drift)



- ✦ Wegener said that all of the continents were once joined together in a supercontinent (which he called Pangaea) which existed about 200 million years ago.
- ✦ The continents then broke apart and drifted to where they are today.

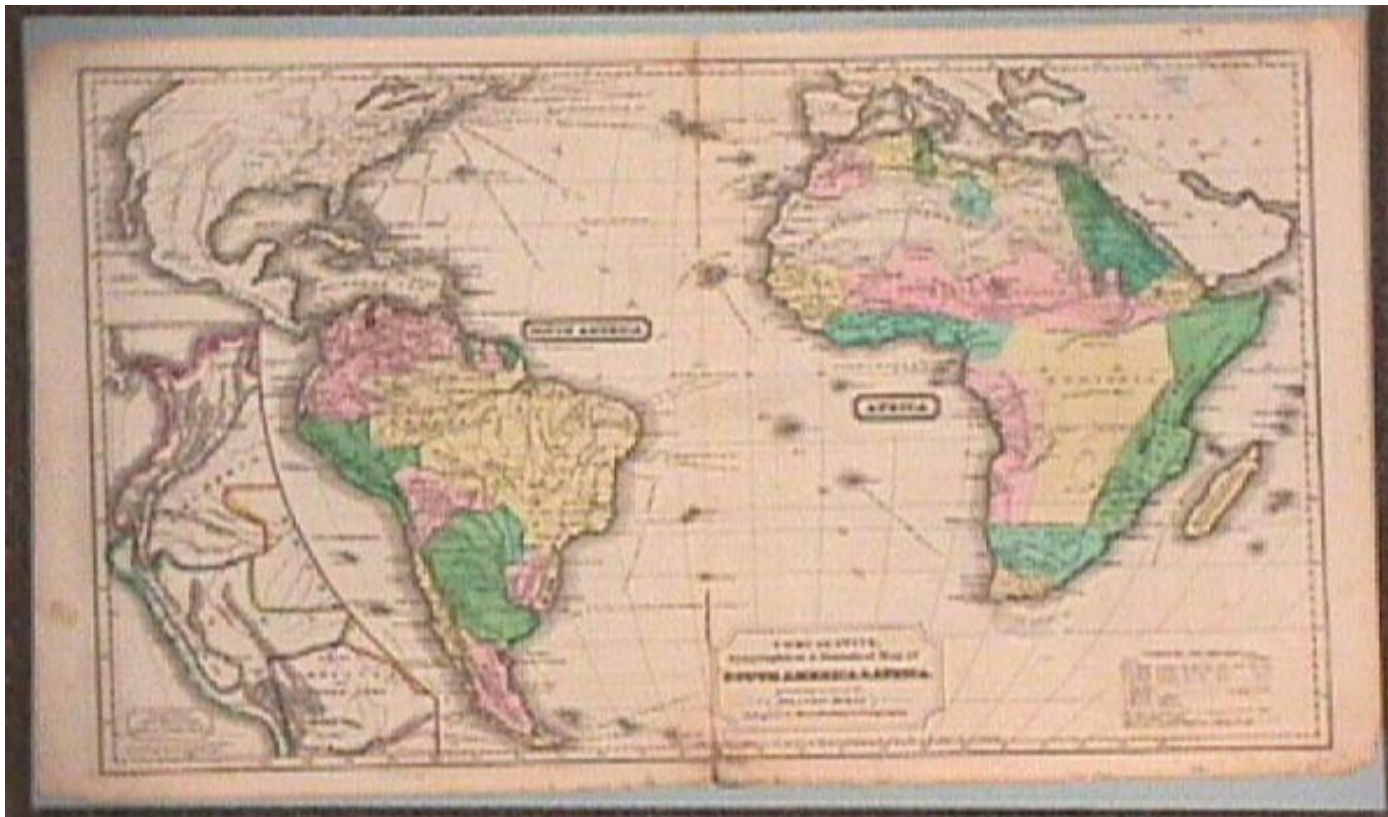


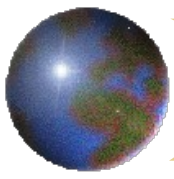




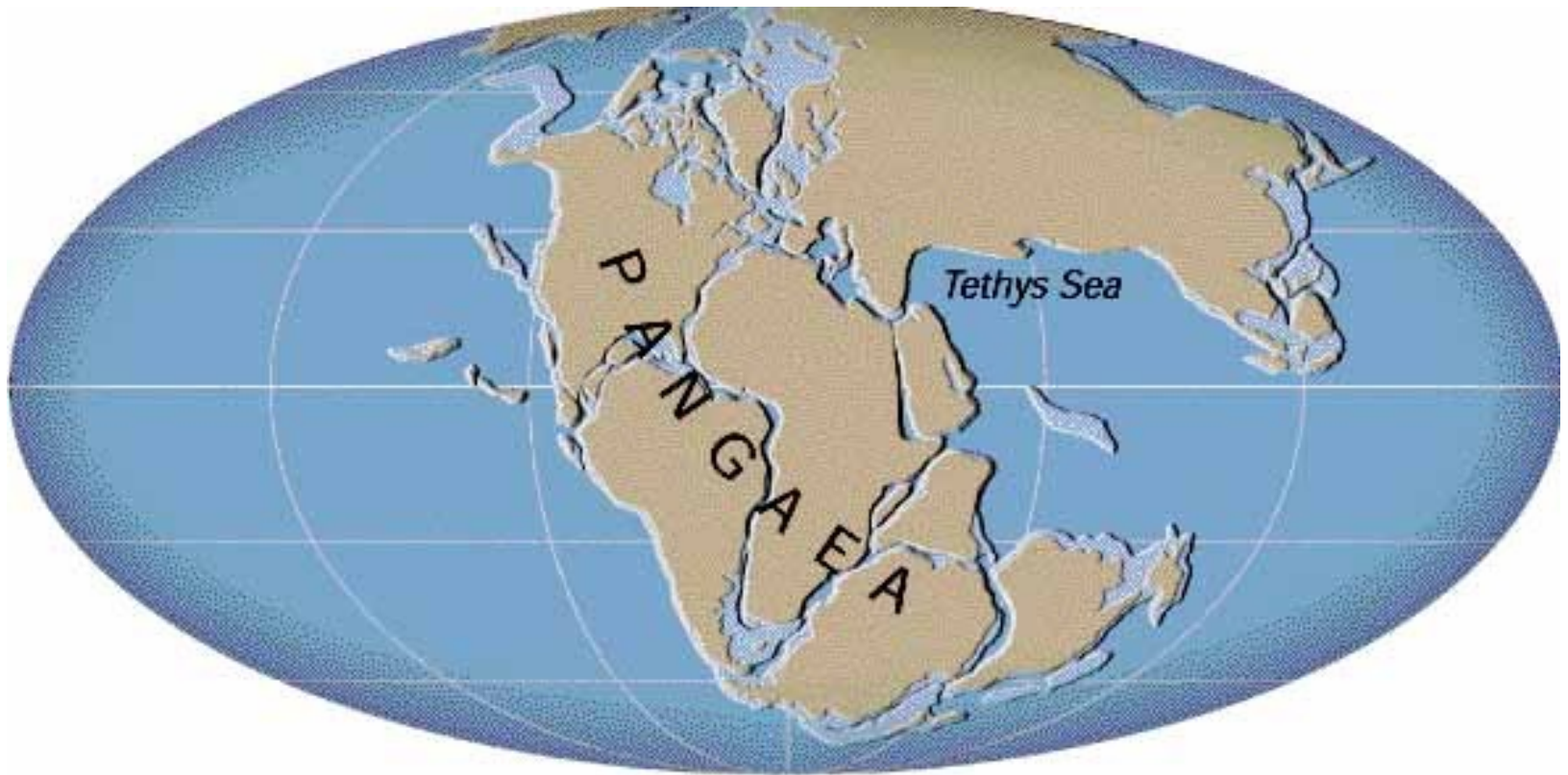
Evidence:

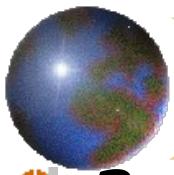
- ❖ **1.** Fit of the Continents
- ❖ The coastlines of Africa and South America looked like they fit together.





Wegener then noticed that the other continents looked like they could have fit together too.

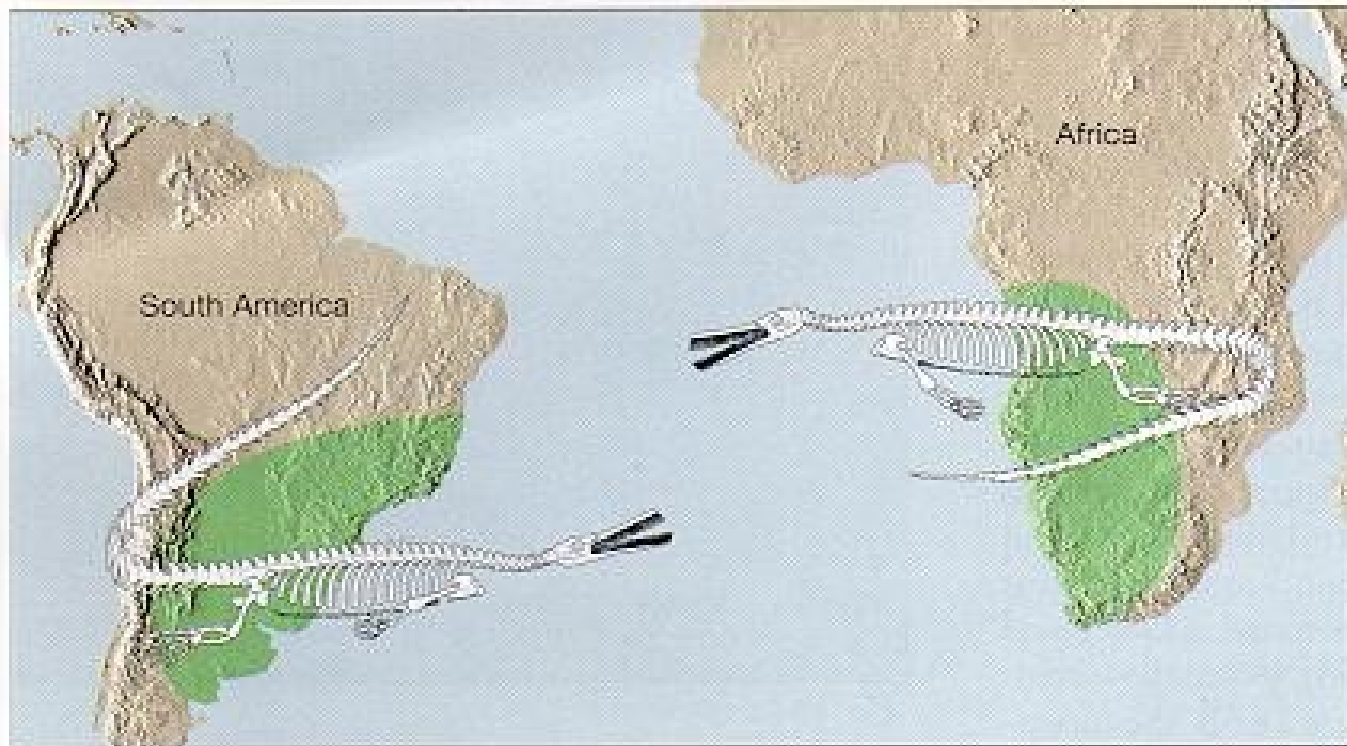


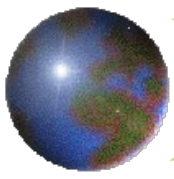


2. Fossil Evidence

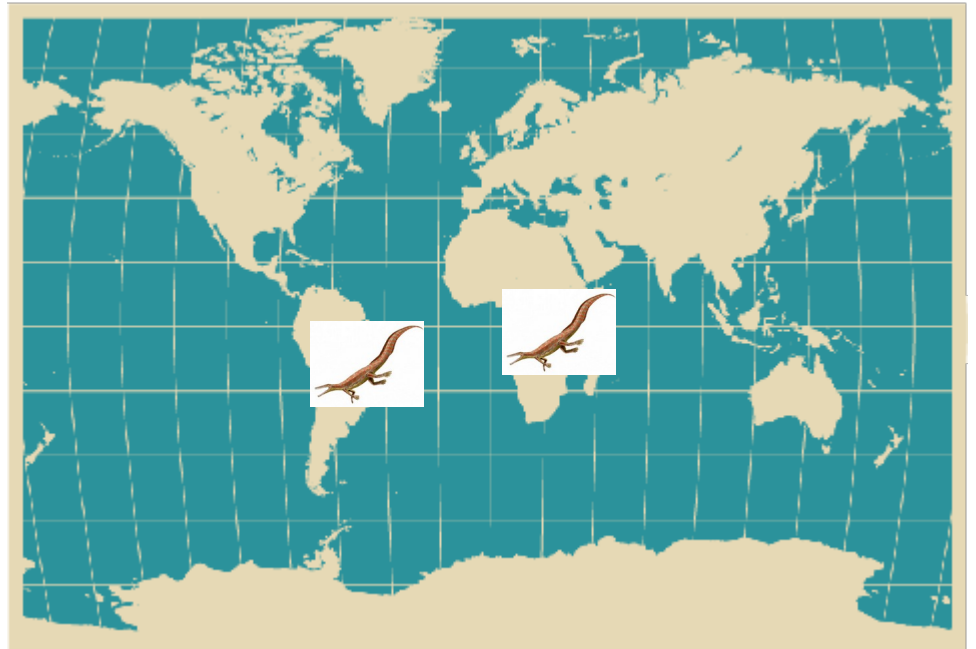


- *fossils of the same plants and animals are found today on widely separated continents (including Africa, South America, Antarctica, Australia, and Asia – India)*

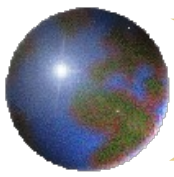




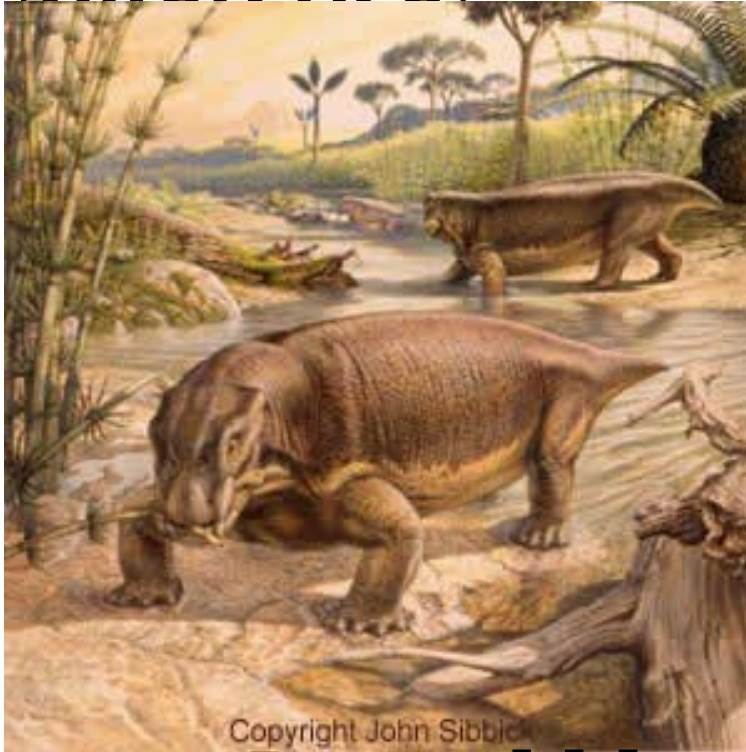
Mesosaurus - fossils have only been found in South America and Africa.



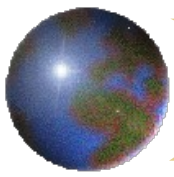
Mesosaurus was a fresh water reptile so it's difficult to imagine him migrating across the ocean.



Lystrosaurus - fossils of this little land reptile were found in Africa, India and Antarctica!



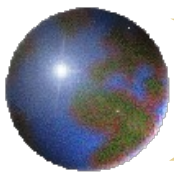
It would have been even harder to imagine Lystrosaurus swimming across an ocean.



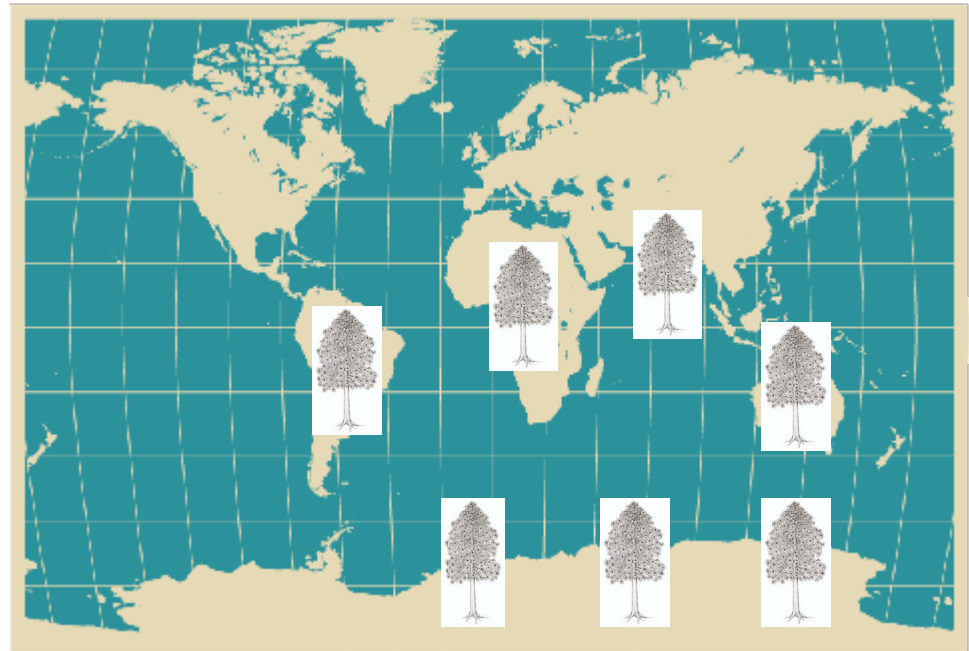
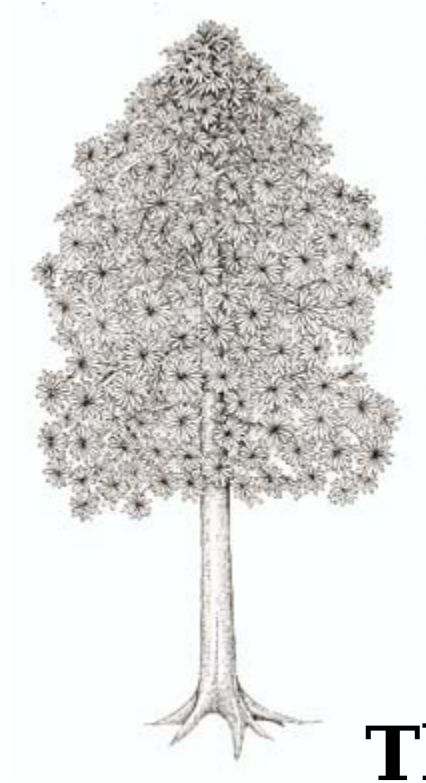
Cynognathus - fossils of this creature are found in Africa and South America



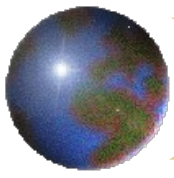
It's unlikely Cynognathus could have made it across the ocean either.



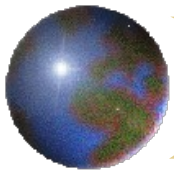
Glossopteris - fossils of this tropical tree are found in South America, Africa, India, Australia and Antarctica!



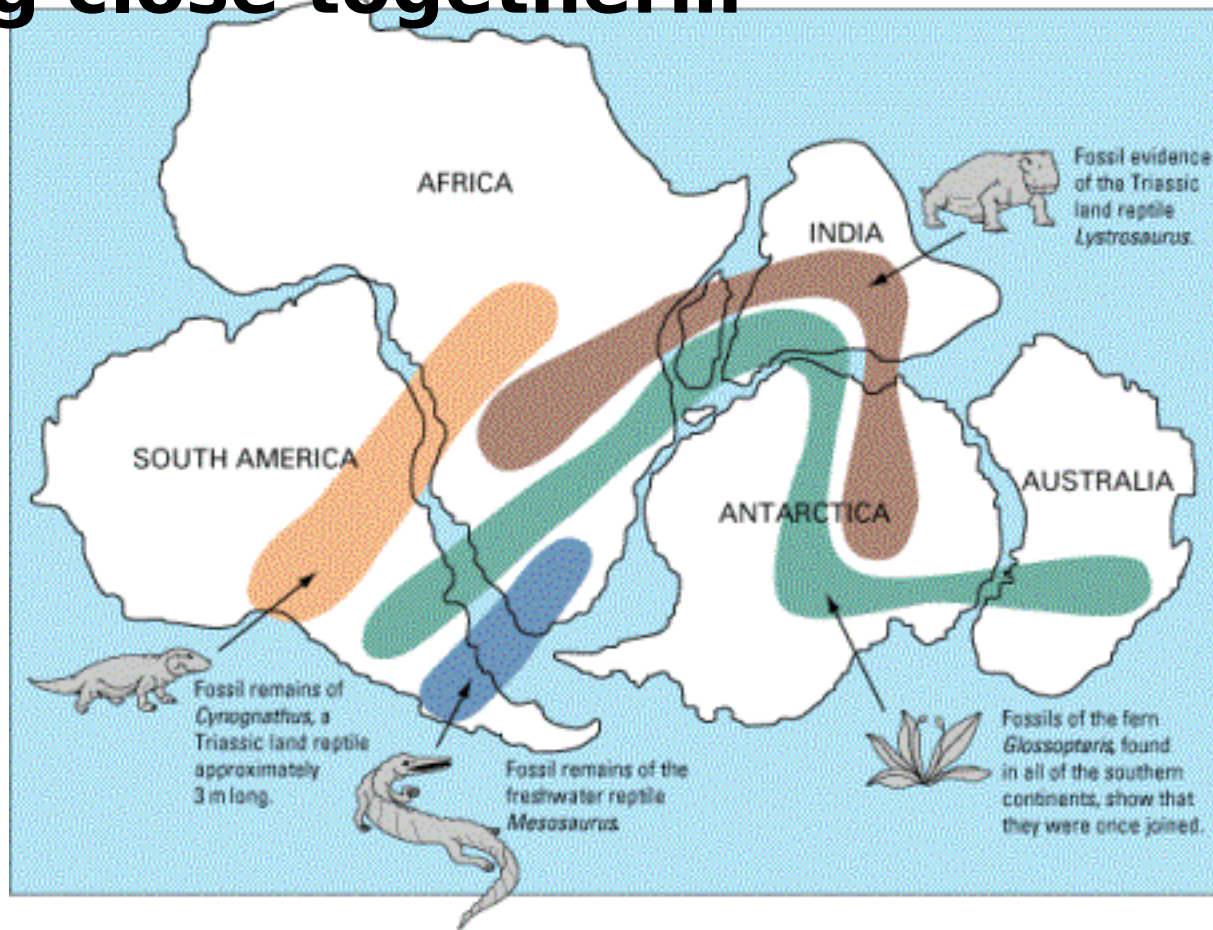
That's one mobile tree!

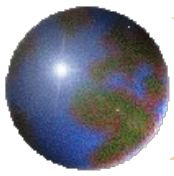


Of course, none of these living things had to move anywhere if Wegener were right.

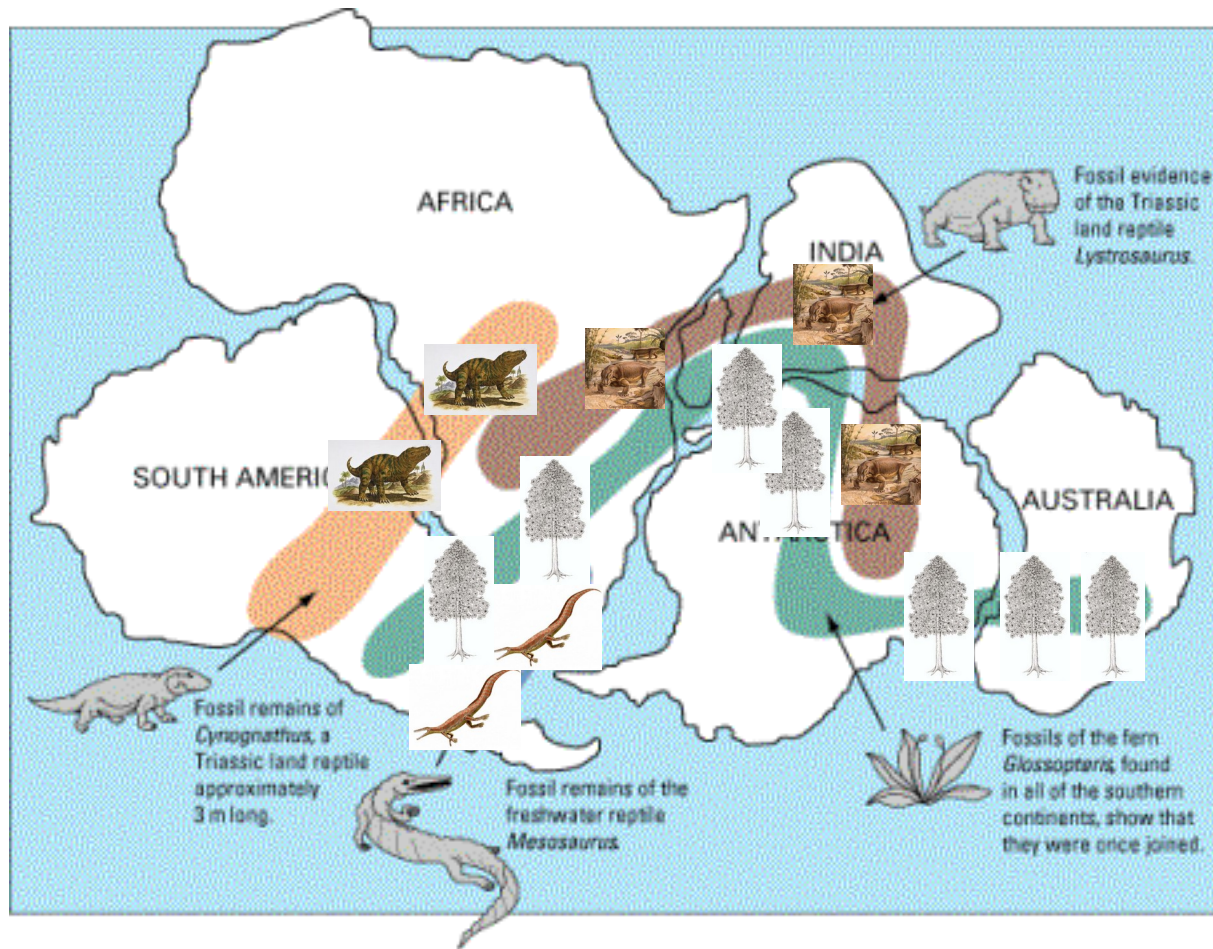


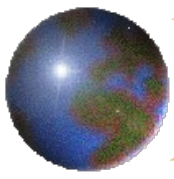
If the continents had been together as Wegener claimed, then the animals that became fossils would have been living close together...



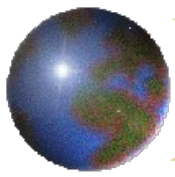


...and then been split apart as the continents moved.

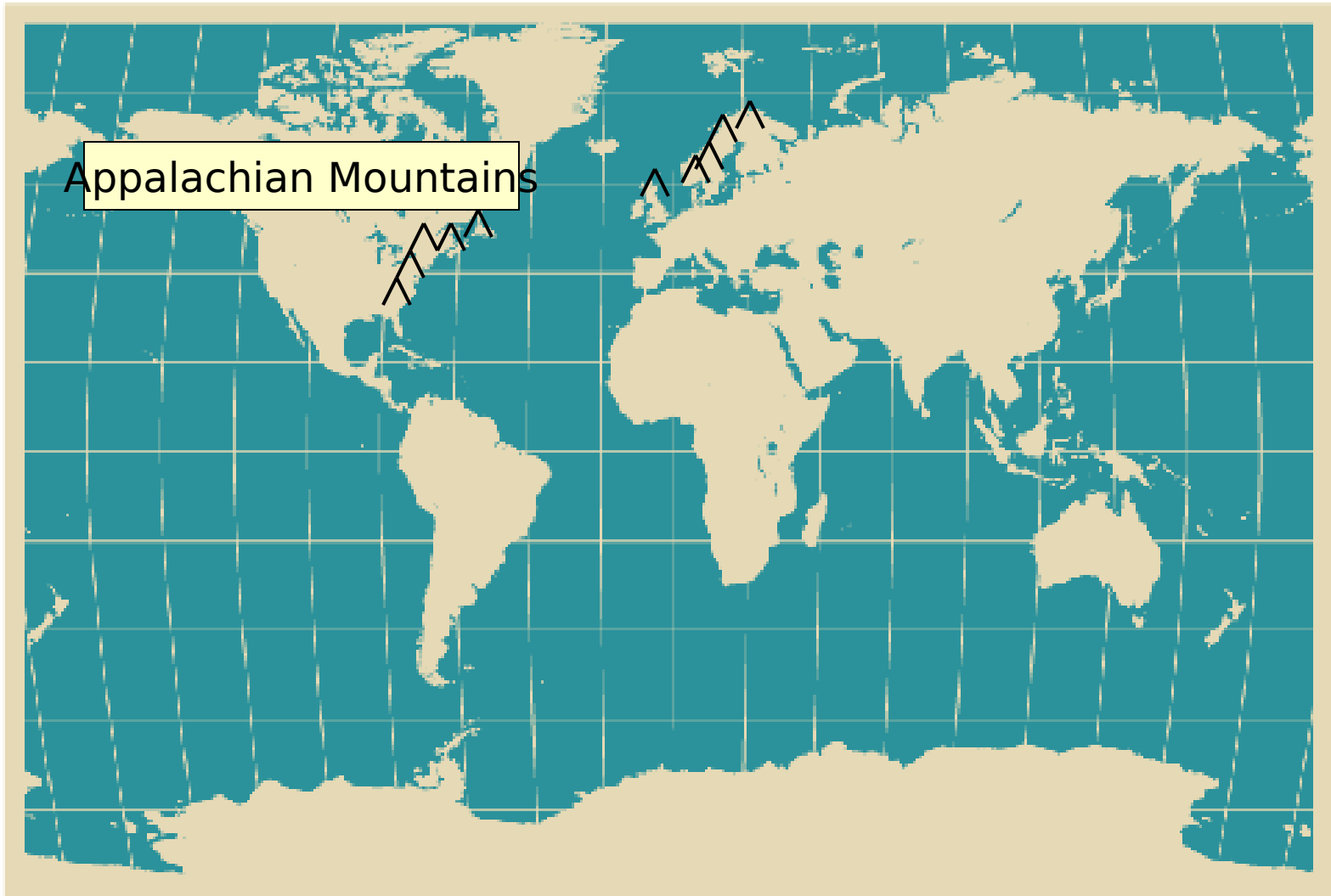


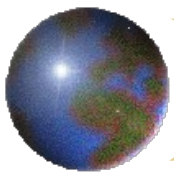


This animation shows the pre-drift locations of *Glossopteris* and *Lystrosaurus*.

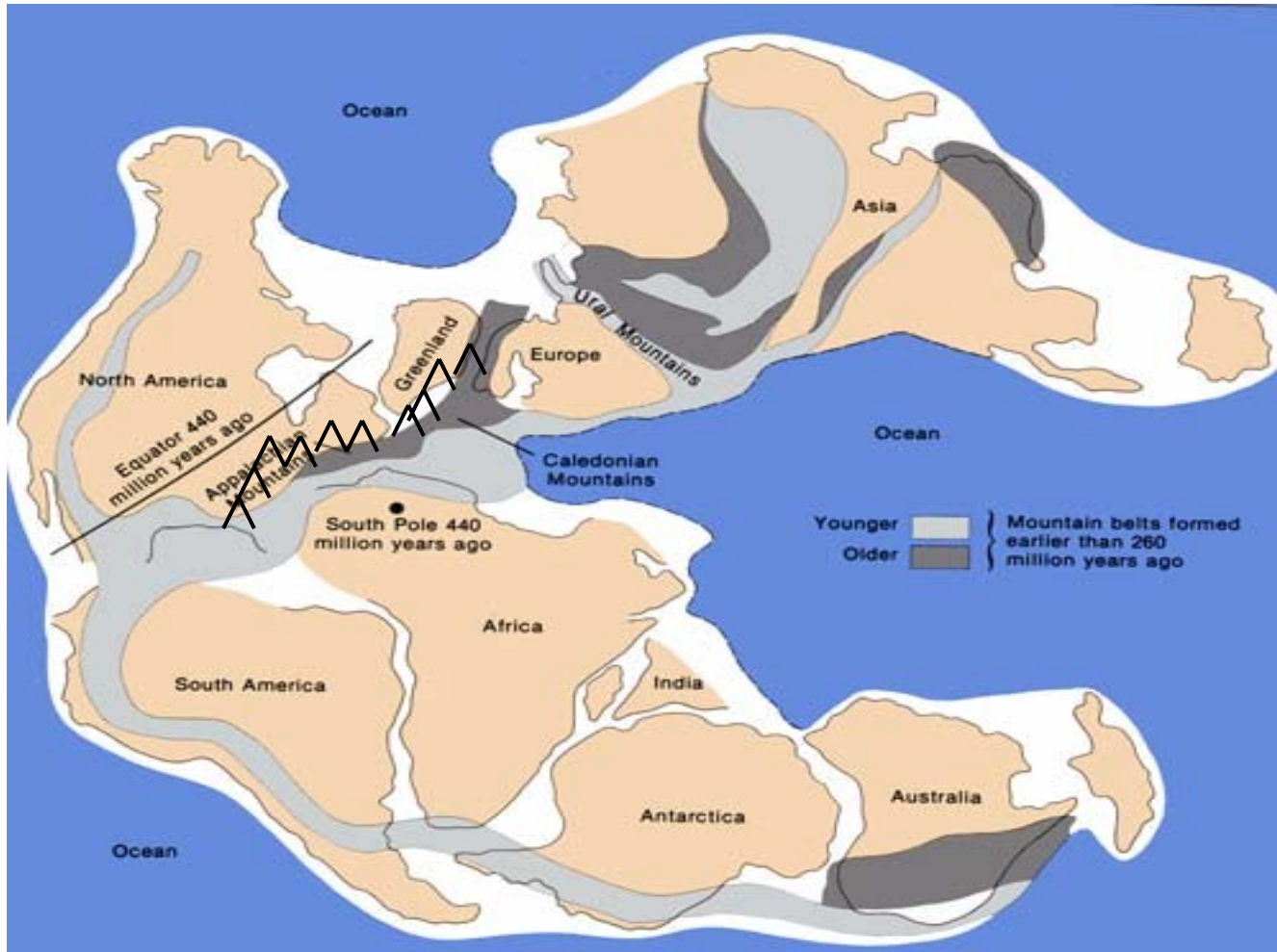


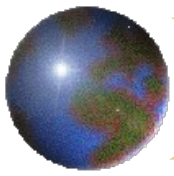
3. The Appalachian Mountains in Europe and the side of the Atlantic Ocean...
is the same mountain chain in North America...





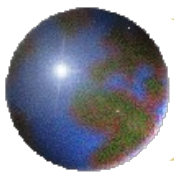
And if the continents are put back to their pre-drift locations the mountains form a continuous chain.



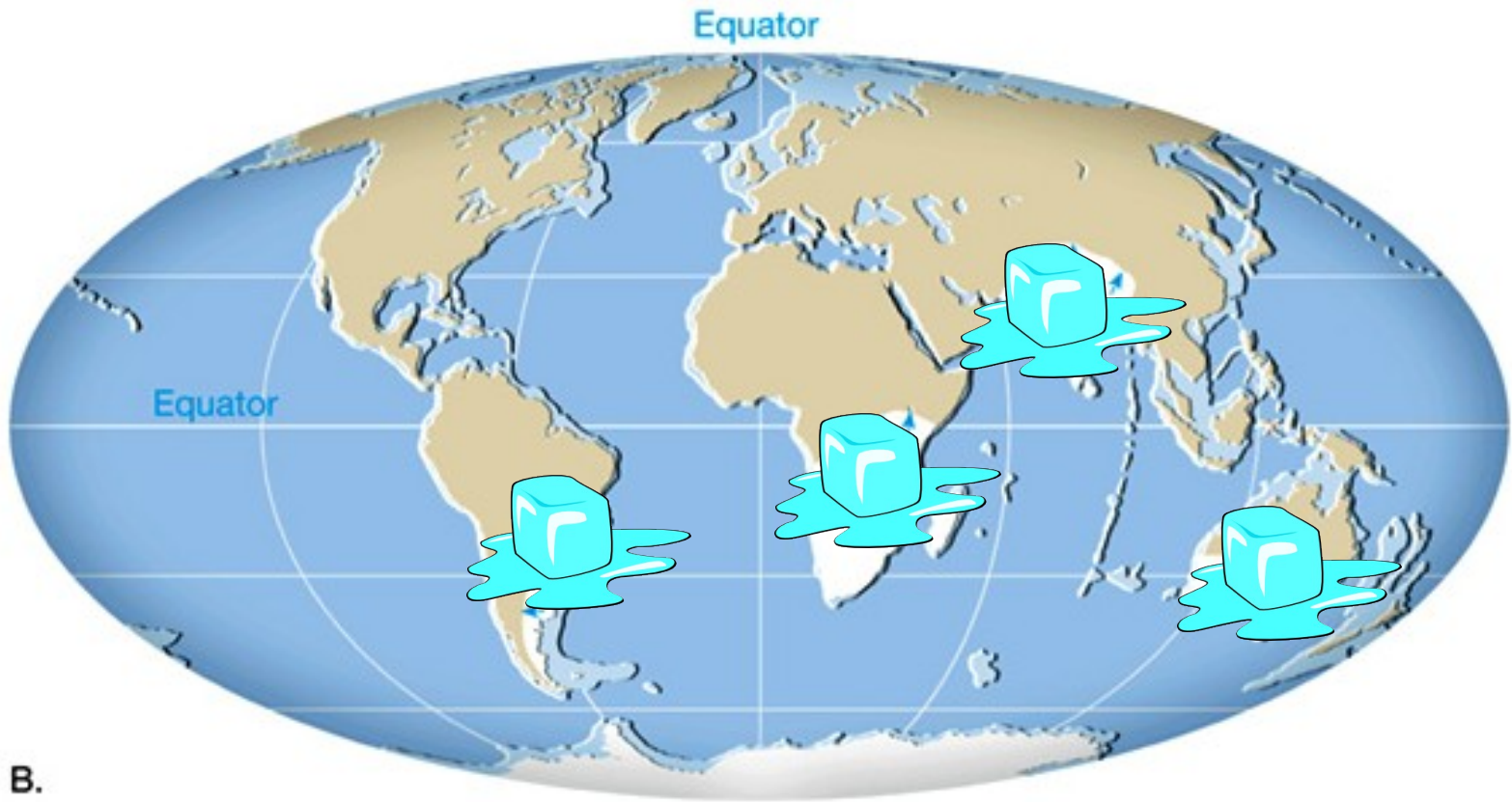


✚ 4. Climate Evidence

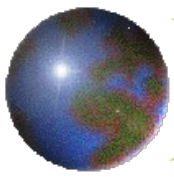
- ✚ - evidence of glaciers on the equator and tropical forests in the arctic.



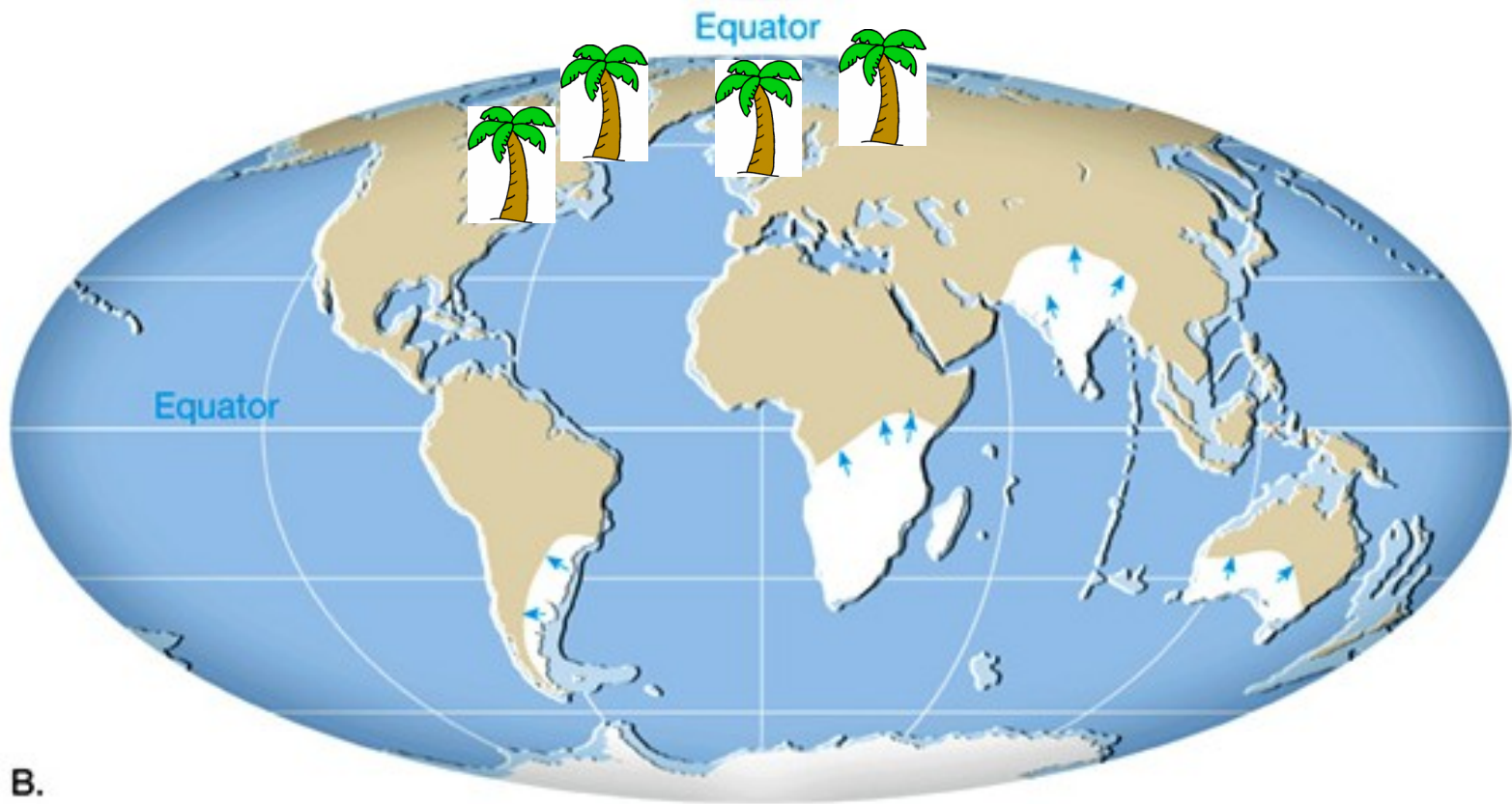
We find evidence of glaciers along the equator (the warmest area of the planet)

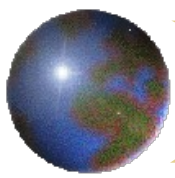


B.

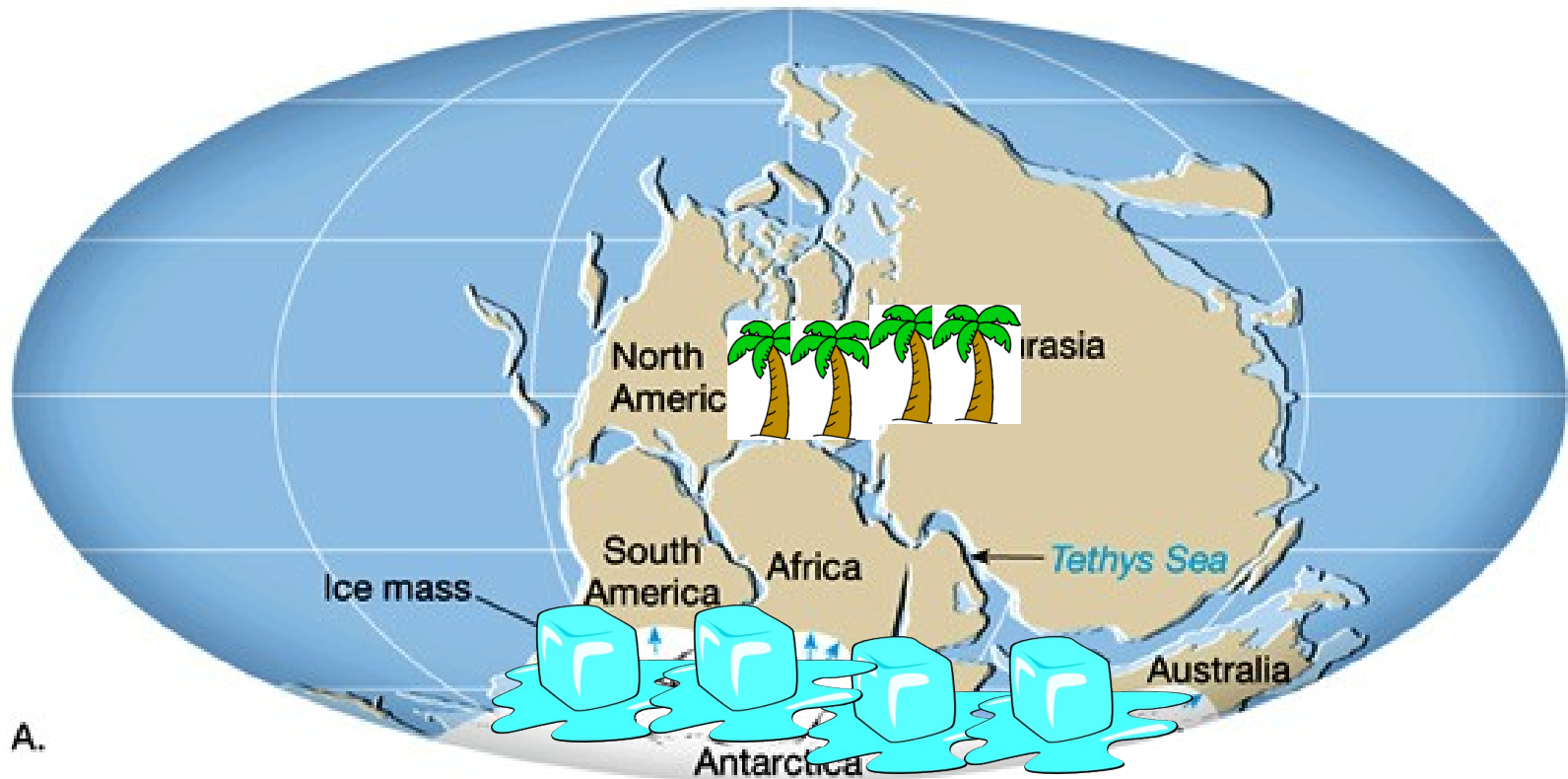


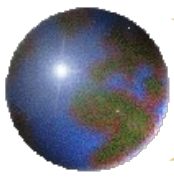
**...and fossils of tropical rain forests in
New Brunswick, northern Canada and
northern Europe**



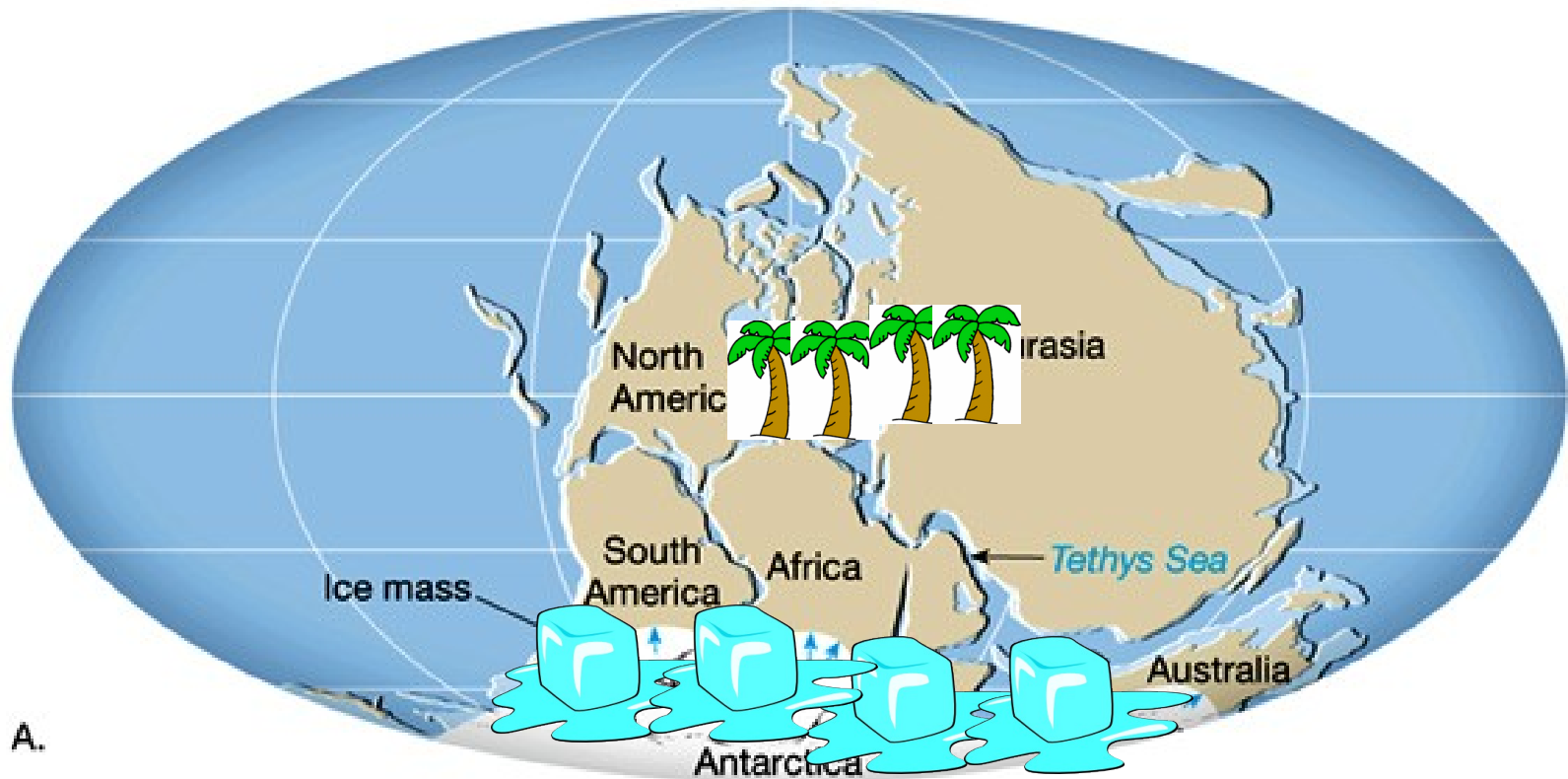


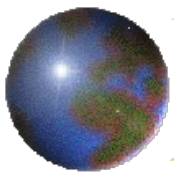
Again, it doesn't make much sense unless the continents are moved back to their pre-drift location.





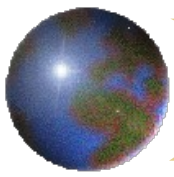
Now the glaciers are near the pole and the palm trees are on the equator.





- ✚ In spite of this evidence, the scientific community rejected Wegener's ideas and he was forgotten for almost fifty years.
- ✚ (He couldn't explain how the continents moved)





✚ If you finish early check these sites:

✚ http://kids.earth.nasa.gov/archive/pangaea/Pangaea_game.html

✚ <http://www.scotese.com/pangeanim.htm>

✚ [World Geography Quiz](#)

✚ <http://www.pbs.org/wgbh/aso/tryit/tectonics/intro.html>